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10/511,062

10/12/2004

Masatoshi Kitagawa

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EXAMINER

WALFORD, NATALIE K

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/511,062	Applicant(s) KITAGAWA ET AL.	
	Examiner NATALIE K. WALFORD	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,11-14,17-19,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,11-14,17-19,21 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 15, 2008 has been entered.

Response to Amendment

The Amendment, filed on May 15, 2008, has been entered and acknowledged by the Examiner. Claims 1, 4-9, 11-14, 17-19, 21 and 22 are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al. (JP 11-120919) in view of Akiba (US 6,873,105).

Regarding claim 1, Shibata discloses a plasma display panel in figures 1 and 3 in which a plurality of pairs of first and second electrodes (items 1 and 2) are disposed on a first substrate (item 5) so as to be parallel to each other, a plurality of third electrodes (item 3) are disposed on

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a second substrate (item 8), and main parts of a plurality of barrier ribs (item 13) are disposed between adjacent third electrodes, the third electrodes being orthogonal to a longitudinal direction of display electrodes each of which consists of a pair of the first and second electrodes (see FIGS. 1 and 3), wherein the barrier ribs are made of nonconductor material (paragraph 24), and a plurality of fourth electrodes (item 9) are fixed to the barrier ribs, the fourth electrodes being electrically exposed to discharge spaces which are defined by the barrier ribs (see FIGS. 1 and 3), but does not expressly disclose that the plurality of fourth electrodes are inserted in the barrier ribs and below a top surface of the barrier ribs, as claimed by Applicant. Akiba is cited to show a plasma display panel in figure 5 that has an electrode (item 55) that is inserted into barrier ribs (item 74) and is below a top surface of the barrier ribs. Akiba teaches that by having an electrode in the barrier rib, sustain pulse voltage can be lowered, luminous efficiency is improved, and luminance is improved (column 1, lines 44-50). This combination is not right as Akiba has metal laminate as barrier rib and electrode inside the metal laminate. The motivation you cited for combination will not work for non-conductive barrier ribs.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Shibata's invention to include the plurality of fourth electrodes are inserted in the barrier ribs and below a top surface of the barrier ribs as suggested by Akiba for lowering sustain pulse voltage and improving luminous efficiency and luminance.

Regarding claim 4, the combined reference of Shibata and Akiba disclose the plasma display panel of claim 1, further comprising: a plurality of fifth electrodes (item 9), which are inserted in the barrier ribs at a second distance from the first substrate.

Regarding claim 22, the combined reference of Shibata and Akiba disclose the plasma display device of Claim 1, wherein the plurality of fourth electrodes are at a first distance from the first substrate, and fixed to the barrier ribs in such a manner as to be inserted in the barrier ribs so as to form right angles with an address electrode (see FIG. 5).

Claims 5-6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al. (JP 11-120919) in view of Akiba (US 6,873,105) in further view of Yoshida et al. (US 6,489,722).

Regarding claim 5, the combined reference of Shibata and Akiba disclose the plasma display panel of claim 4, wherein the fourth electrodes are fixed to the main parts of the barrier ribs (see FIG. 4), but do not expressly disclose that sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes, and the fifth electrodes are fixed to the sub-parts of the barrier ribs, as claimed by Applicant. Shibata only shows the barrier ribs in one direction (see FIG. 3). However, Yoshida shows in figure 1 that the barrier ribs (item 29) go in two directions (items 291 and 292), and one is orthogonal to third electrodes (item A). Yoshida teaches that the discharge gas space is divided at an appropriate position in the column direction (column 4, lines 38-43), flicker is reduced, area of cross talk is decreased, and display fluctuation is reduced. The Examiner notes that Shibata teaches that it is known to have electrodes fixed to barrier ribs, so one with ordinary skill in the art would have easily contemplated having electrodes fixed to the sub-parts of the barrier ribs, as shown by Yoshida.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined reference of Shibata and Akiba to include sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes, and the fifth electrodes are fixed to the sub-parts of the barrier ribs as suggested by Yoshida for reducing flicker, decreasing cross talk, and reducing display fluctuation.

Regarding claim 6, the combined reference of Shibata and Akiba disclose the plasma display panel of any of claim 1, but do not expressly disclose that sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes, as claimed by Applicant. Shibata only shows the barrier ribs in one direction (see FIG. 3). However, Yoshida shows in figure 1 that the barrier ribs (item 29) go in two directions (items 291 and 292), and one is orthogonal to third electrodes (item A). Yoshida teaches that the discharge gas space is divided at an appropriate position in the column direction (column 4, lines 38-43), flicker is reduced, area of cross talk is decreased, and display fluctuation is reduced.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined reference of Shibata and Akiba to include sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes as suggested by Yoshida for reducing flicker, decreasing cross talk, and reducing display fluctuation.

Regarding claim 17, the combined reference of Shibata and Akiba disclose the plasma display panel of claim 4, but do not expressly disclose that sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes,

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as claimed by Applicant. Shibata only shows the barrier ribs in one direction (see FIG. 3).

However, Yoshida shows in figure 1 that the barrier ribs (item 29) go in two directions (items 291 and 292), and one is orthogonal to third electrodes (item A). Yoshida teaches that the discharge gas space is divided at an appropriate position in the column direction (column 4, lines 38-43), flicker is reduced, area of cross talk is decreased, and display fluctuation is reduced.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined reference of Shibata and Akiba to include sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes as suggested by Yoshida for reducing flicker, decreasing cross talk, and reducing display fluctuation.

Claims 7-9 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al. (JP 11-120919) in view of Sato et al. (US 4,423,356) in further view of Akiba (US 6,873,105).

Regarding claim 7, Shibata discloses a plasma display device in figures 1 and 3 in which a plurality of pairs of first and second electrodes (items 1 and 2) are disposed on a first substrate (item 5) so as to be parallel to each other, a plurality of third electrodes (item 3) are disposed on a second substrate (item 8), and main parts of a plurality of barrier ribs (item 13) are disposed between adjacent third electrodes, the third electrodes being orthogonal to a longitudinal direction of display electrodes each of which consists of a pair of the first and second electrodes (see FIGS. 1 and 3), wherein a plurality of fourth electrodes (items 9m-9o), the fourth electrodes being electrically exposed to discharge spaces which are defined by the barrier ribs, but does not

expressly disclose that the fourth electrodes are inserted in the barrier ribs and positioned below a top surface of the barrier rib and the plasma display device includes a driving circuit for applying a voltage to the fourth electrodes or for earthing the fourth electrodes, as claimed by Applicant. Sato is cited to show a plasma display device in figure 2 with fourth electrodes (item 11) that are connected to a driving circuit (column 3, lines 47-51). Sato teaches that by connecting these electrodes to a driving circuit that the fourth electrodes help cause charges to move in order to reestablish the proper potential (column 3, lines 65-56). Akiba is cited to show a plasma display panel in figure 5 that has an electrode (item 55) that is inserted into barrier ribs (item 74) and is positioned below a top surface of the barrier ribs. Akiba teaches that by having an electrode in the barrier rib, sustain pulse voltage can be lowered, luminous efficiency is improved, and luminance is improved (column 1, lines 44-50).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Shibata's invention to include the fourth electrodes are inserted in the barrier ribs and positioned below a top surface of the barrier rib and the plasma display device includes a driving circuit for applying a voltage to the fourth electrodes or for earthing the fourth electrodes as suggested by Sato and Akiba for reestablishing proper potential, lowering sustain pulse voltage, and improving luminous efficiency and luminance.

Regarding claim 8, the combined reference of Shibata, Sato, and Akiba disclose the plasma display device of claim 7, wherein the driving circuit applies a positive voltage to the fourth electrodes (Sato; column 4, lines 38-47).

Regarding claim 9, the combined reference of Shibata, Sato, and Akiba disclose the plasma display device of claim 8, wherein the fourth electrodes are at a first distance from the

first substrate (Shibata; see FIG. 4), and fixed to the barrier ribs in such a manner as to be inserted in the barrier ribs or disposed on surfaces of the barrier ribs (Shibata; see FIG. 4, items 9 and 13).

Regarding claim 11, the combined reference of Shibata, Sato, and Akiba disclose the plasma display device of claim 9, wherein the driving circuit applies a first voltage pulse and a second voltage pulse to the first electrodes and the second electrodes respectively, and additionally applies a third voltage pulse to the fourth electrodes (Sato; see FIG. 2).

Regarding claim 12, the combined reference of Shibata, Sato, and Akiba disclose the plasma display device of claim 11, further comprising: a plurality of fifth electrodes (Sato; items 9m-9o) which are inserted in the barrier ribs at a second distance from the first substrate (Sato; see FIG. 4), wherein the driving circuit applies a fourth voltage pulse to the fifth electrodes when outputting the first voltage pulse and the second voltage pulse at the same time (Shibata; see FIG. 2).

Claims 13-14, 18-19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al. (JP 11-120919) in view of Sato et al. (US 4,423,356) in view of Akiba (US 6,873,105) in further view of Yoshida et al. (US 6,489,722).

Regarding claim 13, the combined reference of Shibata, Sato, and Akiba disclose the plasma display device of claim 12, wherein the fourth electrodes are fixed to the main parts of the barrier ribs (Shibata; see FIG. 4), but does not expressly disclose that sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes, and the fifth electrodes are fixed to the sub-parts of the barrier ribs, as claimed by

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Applicant. Shibata only shows the barrier ribs in one direction (see FIG. 3). However, Yoshida shows in figure 1 that the barrier ribs (item 29) go in two directions (items 291 and 292), and one is orthogonal to third electrodes (item A). Yoshida teaches that the discharge gas space is divided at an appropriate position in the column direction (column 4, lines 38-43), flicker is reduced, area of cross talk is decreased, and display fluctuation is reduced. The Examiner notes that Shibata teaches that it is known to have electrodes fixed to barrier ribs, so one with ordinary skill in the art would have easily contemplated having electrodes fixed to the sub-parts of the barrier ribs, as shown by Yoshida.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined reference of Shibata, Sato, and Akiba to include sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes, and the fifth electrodes are fixed to the sub-parts of the barrier ribs as suggested by Yoshida for reducing flicker, decreasing cross talk, and reducing display fluctuation.

Regarding claim 14, the combined reference of Shibata, Sato, and Akiba disclose the plasma display device of claim 7, but do not expressly disclose that sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes, as claimed by Applicant. Shibata only shows the barrier ribs in one direction (see FIG. 3). However, Yoshida shows in figure 1 that the barrier ribs (item 29) go in two directions (items 291 and 292), and one is orthogonal to third electrodes (item A). Yoshida teaches that the discharge gas space is divided at an appropriate position in the column direction (column 4, lines 38-43), flicker is reduced, area of cross talk is decreased, and display fluctuation is reduced.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined reference of Shibata, Sato, and Akiba to include sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes as suggested by Yoshida for reducing flicker, decreasing cross talk, and reducing display fluctuation.

Regarding claim 18, the combined reference of Shibata, Sato, and Akiba disclose the plasma display device of claim 8, but do not expressly disclose that sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes, as claimed by Applicant. Shibata only shows the barrier ribs in one direction (see FIG. 3). However, Yoshida shows in figure 1 that the barrier ribs (item 29) go in two directions (items 291 and 292), and one is orthogonal to third electrodes (item A). Yoshida teaches that the discharge gas space is divided at an appropriate position in the column direction (column 4, lines 38-43), flicker is reduced, area of cross talk is decreased, and display fluctuation is reduced.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined reference of Shibata, Sato, and Akiba to include sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes as suggested by Yoshida for reducing flicker, decreasing cross talk, and reducing display fluctuation.

Regarding claim 19, the combined reference of Shibata, Sato, and Akiba disclose the plasma display device of claim 9, but do not expressly disclose that sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes, as claimed by Applicant. Shibata only shows the barrier ribs in one direction (see

FIG. 3). However, Yoshida shows in figure 1 that the barrier ribs (item 29) go in two directions (items 291 and 292), and one is orthogonal to third electrodes (item A). Yoshida teaches that the discharge gas space is divided at an appropriate position in the column direction (column 4, lines 38-43), flicker is reduced, area of cross talk is decreased, and display fluctuation is reduced.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined reference of Shibata, Sato, and Akiba to include sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes as suggested by Yoshida for reducing flicker, decreasing cross talk, and reducing display fluctuation.

Regarding claim 21, the combined reference of Shibata, Sato, and Akiba disclose the plasma display device of claim 11, but do not expressly disclose that sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes, as claimed by Applicant. Shibata only shows the barrier ribs in one direction (see FIG. 3). However, Yoshida shows in figure 1 that the barrier ribs (item 29) go in two directions (items 291 and 292), and one is orthogonal to third electrodes (item A). Yoshida teaches that the discharge gas space is divided at an appropriate position in the column direction (column 4, lines 38-43), flicker is reduced, area of cross talk is decreased, and display fluctuation is reduced.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined reference of Shibata, Sato, and Akiba to include sub-parts of the barrier ribs, which bridge adjacent main parts of the barrier ribs, are substantially orthogonal to the third electrodes as suggested by Yoshida for reducing flicker, decreasing cross talk, and reducing display fluctuation.

Response to Arguments

Applicant's arguments filed May 15, 2008 have been fully considered but they are not persuasive. The Examiner respectfully disagrees with Applicant's arguments. The Examiner first points to Shibata, which teaches that the barrier ribs are made from a dielectric material (paragraph 24). Dielectrics are a material that does not conduct electricity, so it is a nonconductive material. The Akiba reference shows in figure 5 electrodes (item 55) that are below a top surface of the barrier ribs (item 74). Since the electrodes are below the top surface, Akiba meets the claimed limitations. The Examiner notes that the only a piece of Akiba's device is being substituted into the Shibata reference. Furthermore, the barrier rib of Aikba is not made from a conductive material, so it is similar to the barrier rib of the Shibata reference. Therefore, the electrode in the barrier rib of the Akiba reference would work in the Shibata reference.

In response to Applicant's argument that there is not a reasonable expectation of success, it has been held that the test for obviousness is not whether the features of one reference may be bodily incorporated into the other to produce the claimed subject matter, but simply what the combination of references makes obvious to one of ordinary skill in the pertinent art. Also, for commercial success of a product embodying a claimed invention to have true relevance to the issue of nonobviousness, that success must be shown to have in some way been due to the nature of the claimed invention, as opposed to other economic and commercial factors unrelated to the technical quality of the patented subject matter. Thus, a nexus is required between the merits of the claimed invention and the evidence offered, if that evidence is to be given substantial weight in route to a conclusion on the obviousness issue. Hence, the claimed limitations are met as set forth.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalie K. Walford whose telephone number is (571)-272-6012. The examiner can normally be reached on Monday-Friday, 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

nkW
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